
AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application.

1. (CURRENTLY AMENDED) A reformer for a mixture of low-pressure hydrocarbon gas and steam for fueling a proton-exchange fuel cell with hydrogen from said mixture, comprising:

a cylinder loosely packed with a palletized catalyst with a cap at each end, a fuel tube having an outflow end coupled to said cylinder for introducing said hydrocarbon gas into one end of said cylinder at low pressure having an outflow end coupled to said cylinder through a cap at one end of said cylinder,

a steam tube coaxial with said fuel tube and surrounding said fuel tube for concurrently introducing said hydrocarbon gas and steam at a pressure higher than said low the pressure of said hydrocarbon gas through said cap at said one end of said cylinder, said steam tube having a tip of finite length at its outflow end that is gradually reduced in diameter over its length to form a truncated conical tip, with its said fuel tube having a substantially open end coincident with, and of smaller diameter than said steam tube diameter forming an outflow end for said fuel tube, and,

an outflow tube protruding outwardly from said cylinder through an end cap at an end of said cylinder opposite said one end,

wherein said steam tube extends being formed and to said outflow end of said fuel tube not only for flowing steam to draw out said low pressure hydrocarbon gas for mixing into mixture with said steam, but also flows and to direct said steam through a core of said fuel outflow in a direction path that is at an acute angle with the direction path of said fuel outflow core, which is said fuel flow path lying

substantially along the axis of said coaxial fuel and steam tubes, ~~thereby causing to cause steam to and that crosses~~ said fuel outflow path at an acute angle from all radial directions[[,]].

~~whereby said hydrocarbon gas and steam mix before coming in contact with said loosely packed palletized catalyst as steam and fuel mixture flows over said catalyst through said cylinder to produce a high yield of H₂, as said hydrocarbon gas is converted into a flow of H₂, CO and CO₂ through said outflow tube of said cylinder.~~

2. (CURRENTLY AMENDED) A hydrocarbon gas and steam reformer as defined in claim 1 wherein said fuel tube has a tip of finite given length at its outflow end that is reduced in diameter gradually along said finite given length.

3. (CURRENTLY AMENDED) A hydrocarbon gas and steam reformer as defined in claim 1 where said hydrocarbon gas is low pressure propane, stored as liquefied liquefied propane in a container for safe use on aboard recreational vehicles.

4. (PREVIOUSLY PRESENTED) A hydrocarbon gas and steam reformer as defined in claim 1 including a heat source around said cylinder for heating said catalyst.

5. (NEW) A method for mixing low pressure hydrocarbon gas with steam for fueling a portion-exchange fuel cell with hydrogen from said mixture comprising: mixing low pressure hydrocarbon gas with steam at a pressure higher than said low pressure hydrocarbon gas, said mixing taking place at the outlet ends of two concentric tubes, an outer tube and an inner tube, said outer tube delivering steam

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and said inner tube delivering said low pressure hydrocarbon gas, wherein said mixing includes directing steam into said hydrocarbon gas at an acute angle to the path of said hydrocarbon gas flow on a plurality of radial paths.